

CLAIMS

1. A device for data communication between a first host device or a further host device and at least one client device on a shared transmission path having:
  - a first host device (1), which includes a host application (11);
  - at least one further host device (2), which includes a host application (21);
  - at least one client device (3, 4, 5, 6, 7), which includes a client application (34, 44, 54, 64, 74);
  - a bus control module (8);
  - the host devices (1,2) and the client device(s) (3, 4, 5, 6, 7), as well as the bus control module (8), being connected to one another by the transmission path (9) for exchanging data and/or signals with one another and
  - the bus control module (8) being implemented to control the access of the host devices (1,2) to the transmission path (9).
2. The device according to Claim 1,  
  
characterized in that  
  
the first and/or the further host devices (1, 2), in particular the host application (11, 12), have a processor.
3. The device according to Claim 1 or 2,

characterized in that

the transmission path (9) is implemented as a data bus.

4. The device according to Claim 1, 2, or 3,

characterized in that

the host devices (1, 2) each have a master application interface module (10, 20), which is linked in the transmission path (9).

5. The device according to Claim 4,

characterized in that

the host devices (1, 2) each have a master application module (14, 24), which connects the particular host application (11, 21) to the assigned master application interface module (10, 20).

6. The device according to one of the preceding claims,

characterized in that

each client device (3, 4, 5, 6, 7) has a client application interface module (30, 40, 50, 60, 70), which is linked in the transmission path (9) and is connected to the assigned client application (34, 44, 54, 64, 74).

7. A method of data communication between a first host device or a further host device and at least one client device on a shared transmission path, having the following steps:

- opening a communication connection between a host application running on the host device and a client application running on the client device;
- transmitting arbitration information on the transmission path along the opened communication connection, the arbitration information containing data, on the basis of which the transmission path is reserved for a predetermined time interval or for a predetermined data volume for a subsequent data transmission on the transmission path along the opened communication connection;
- transmitting data and/or signals between the host application and the client application and/or between the client application in the host application on the transmission path along the opened communication connection.

8. The method according to Claim 7,

characterized in that

the arbitration information is transmitted as an arbitration block, an arbitration block having arbitration data which includes information about the length of the predetermined time interval or about the extent of the predetermined data volume for the subsequent data transmission.

9. The method according to Claim 8,

characterized in that

the arbitration block has activity data which includes information about the current state of the

transmission path, from which it may be concluded whether the transmission path is currently being used for data transmission.

10. The method according to Claim 7,

characterized in that,

in the event of an access wish of a host application to the transmission path, the following steps are performed:

- the master application interface module assigned to the host application accepts the arbitration block present on the transmission path,
- reads out the activity data,
- checks, on the basis of the activity data, whether the transmission path is currently free for data transmission,
- writes, if the transmission path is free, activity data in the arbitration block which indicates use of the transmission path by the host application, and
- transfers the arbitration block to the bus control module via the transmission path;
- upon which the bus control module reserves the transmission path for the access by the host application.

11. The method according to Claim 10,

characterized in that,

after termination of a data transmission, the activity data in the arbitration block is reset by the master application interface module and the transmission path is thus released again.